

DERWENT-ACC-NO: 1997-283244

DERWENT-WEEK: 200436

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TITLE: Manufacture of thin film transistor liquid
crystal
displays - with reduced number of
photolithography steps
preventing battery effect and hillock
generation

INVENTOR: LEE, J; NAM, H ; LEE, J G ; LEE, J H ; NAM, H R

PRIORITY-DATA: 1996KR-0013912 (April 30, 1996) , 1995KR-0042618
(November 21,
1995) , 1995KR-0044893 (November 29, 1995)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE
PAGES MAIN-IPC		
JP 2004157554 A	June 3, 2004	N/A
015 G02F 001/1368		
* EP 775931 A2	May 28, 1997	E
016		
JP 09171197 A	June 30, 1997	N/A
009 G02F 001/136		
KR 97028663 A	June 24, 1997	N/A
000 G02F 001/136		
KR 97028758 A	June 24, 1997	N/A
000 G02F 001/133		
US 6008065 A	December 28, 1999	N/A
000 G02F 001/1343		
KR 183757 B1	May 1, 1999	N/A
000		
KR 219480 B1	September 1, 1999	N/A
000 H01L 021/00		
TW 426809 A	March 21, 2001	N/A
000 G02F 001/133		
US 6331443 B1	December 18, 2001	N/A
000 G02F 001/136		
US 6339230 B1	January 15, 2002	N/A
000 G02F 001/13		
US 20020106825 A1	August 8, 2002	N/A
000 H01L 021/00		
US 6661026 B2	December 9, 2003	N/A
000 H01L 021/84		

H01L 021/84

H01L 021/336

INT-CL (IPC): G02F001/13, G02F001/133, G02F001/1343, G02F001/136, G02F001/1368, H01L021/00, H01L021/28, H01L021/3205, H01L021/336, H01L021/768, H01L021/84, H01L029/423, H01L029/49, H01L029/786

ABSTRACTED-PUB-NO: EP 775931A

BASIC-ABSTRACT:

Method for manufacturing a liquid crystal display by: (a) forming a gate electrode and gate pad by sequential deposition of first and second metal films on a substrate on a thin film transistor TFT area and a pad area by a first photolithography process; (b) forming an insulating film over the entire surface; (c) forming a second semiconductor film pattern on the TFT area by a second photolithography process; (d) forming source and drain electrodes of a third metal film in the TFT area by a third photolithography process; (e) forming a protection film pattern so as to expose a portion of the drain electrode and gate pad by a fourth photolithographic process; and (f) forming a pixel electrode connected to the drain electrode and gate pad by a fifth photolithographic process.

USE - Thin film transistor liquid crystal displays.

ADVANTAGE - Manufacturing costs are reduced and productivity increased by reducing the number of photolithographic processing steps. Battery effect and hillock generation are prevented. Deterioration of device is avoided by preventing generation of an undercut in a gate electrode.

ABSTRACTED-PUB-NO: US 6008065A

EQUIVALENT-ABSTRACTS:

Method for manufacturing a liquid crystal display by: (a) forming a gate electrode and gate pad by sequential deposition of first and second metal films on a substrate on a thin film transistor TFT area and a pad area by a first photolithography process; (b) forming an insulating film over the entire surface; (c) forming a second semiconductor film pattern on the TFT area by a second photolithography process; (d) forming source and drain electrodes of a third metal film in the TFT area by a third photolithography process; (e) forming a protection film pattern so as to expose a portion of the drain electrode and gate pad by a fourth photolithographic process; and (f) forming a pixel electrode connected to the drain electrode and gate pad by a fifth photolithographic process.

USE - Thin film transistor liquid crystal displays.

ADVANTAGE - Manufacturing costs are reduced and productivity increased by reducing the number of photolithographic processing steps. Battery effect and hillock generation are prevented. Deterioration of device is avoided by preventing generation of an undercut in a gate electrode.

US 6331443B

Method for manufacturing a liquid crystal display by: (a) forming a gate electrode and gate pad by sequential deposition of first and second metal films on a substrate on a thin film transistor TFT area and a pad area by a first photolithography process; (b) forming an insulating film over the entire surface; (c) forming a second semiconductor film pattern on the TFT area by a second photolithography process; (d) forming source and drain electrodes of a

third metal film in the TFT area by a third photolithography process;
(e)
forming a protection film pattern so as to expose a portion of the
drain
electrode and gate pad by a fourth photolithographic process; and (f)
forming a
pixel electrode connected to the drain electrode and gate pad by a
fifth
photolithographic process.

USE - Thin film transistor liquid crystal displays.

ADVANTAGE - Manufacturing costs are reduced and productivity
increased by
reducing the number of photolithographic processing steps. Battery
effect and
hillock generation are prevented. Deterioration of device is avoided
by
preventing generation of an undercut in a gate electrode.

US 6339230B

Method for manufacturing a liquid crystal display by: (a) forming a
gate
electrode and gate pad by sequential deposition of first and second
metal films
on a substrate on a thin film transistor TFT area and a pad area by a
first
photolithography process; (b) forming an insulating film over the
entire
surface; (c) forming a second semiconductor film pattern on the TFT
area by a
second photolithography process; (d) forming source and drain
electrodes of a
third metal film in the TFT area by a third photolithography process;
(e)
forming a protection film pattern so as to expose a portion of the
drain
electrode and gate pad by a fourth photolithographic process; and (f)
forming a
pixel electrode connected to the drain electrode and gate pad by a
fifth
photolithographic process.

USE - Thin film transistor liquid crystal displays.

ADVANTAGE - Manufacturing costs are reduced and productivity
increased by
reducing the number of photolithographic processing steps. Battery
effect and

hillock generation are prevented. Deterioration of device is avoided by preventing generation of an undercut in a gate electrode.

US20020106825A

Method for manufacturing a liquid crystal display by: (a) forming a gate electrode and gate pad by sequential deposition of first and second metal films on a substrate on a thin film transistor TFT area and a pad area by a first photolithography process; (b) forming an insulating film over the entire surface; (c) forming a second semiconductor film pattern on the TFT area by a second photolithography process; (d) forming source and drain electrodes of a third metal film in the TFT area by a third photolithography process; (e) forming a protection film pattern so as to expose a portion of the drain electrode and gate pad by a fourth photolithographic process; and (f) forming a pixel electrode connected to the drain electrode and gate pad by a fifth photolithographic process.

USE - Thin film transistor liquid crystal displays.

ADVANTAGE - Manufacturing costs are reduced and productivity increased by reducing the number of photolithographic processing steps. Battery effect and hillock generation are prevented. Deterioration of device is avoided by preventing generation of an undercut in a gate electrode.

CHOSEN-DRAWING: Dwg.11/23